

WHAT IS CLAIMED IS:

1. A system comprising:
 - a mechanical arm;
 - an attachment member tiltably mounted on the mechanical arm about a pivot joint;
 - an actuator operably connected to the attachment member for powering the attachment member to tilt about the pivot joint;
 - a power system operably connected to the actuator;
 - an electronic control operatively connected to the power system, and comprising an automatic vibration mechanism for causing the attachment member to vibrate automatically in response to an activation signal; and
 - an operator interface in operable communication with the electronic control; and
 - wherein the system comprises a default state, and an activation state for causing the activation signal.

2. The system of claim 1, wherein the attachment member has a range of tilt about the pivot joint bounded by an extreme forward orientation and an extreme rearward orientation, and wherein the activation state comprises the attachment member being oriented within a predetermined segment of the range of tilt.

3. The system of claim 2, wherein the activation state also comprises the attachment member being oriented within the predetermined segment of the range of tilt for a predetermined length of time.
4. The system of claim 2, wherein the predetermined segment of the range of tilt includes the extreme forward orientation.
5. The system of claim 1, wherein the attachment member has a range of lift above a projected ground surface bounded by a minimum lift and a maximum lift, and wherein the activation state comprises the attachment member being positioned within a predetermined segment of the range of lift.
6. The system of claim 5, wherein the activation state also comprises the attachment member being positioned within the predetermined segment of the range of lift for a predetermined length of time.
7. The system of claim 5, wherein the predetermined segment of the range of lift includes the maximum lift.
8. The system of claim 5, wherein the attachment member also has a range of tilt about the pivot joint bounded by an extreme forward orientation

and an extreme rearward orientation, and wherein the activation state comprises the attachment member being both positioned within a predetermined segment of the range of lift, and oriented within a predetermined segment of the range of tilt.

9. The system of claim 8, wherein the activation state also comprises the attachment member being positioned within the predetermined segment of the range of lift and oriented within the predetermined segment of the range of tilt, for a predetermined length of time.
10. The system of claim 1, wherein the activation state comprises the attachment member undergoing a minimum load.
11. The system of claim 10, wherein the minimum load for the activation state is detected by a mechanical strain gauge.
12. The system of claim 10, wherein the minimum load for the activation state is detected by a hydraulic pressure gauge.
13. The system of claim 10, wherein the activation state also comprises a position and an orientation

of the attachment member that are consistent with digging.

14. The system of claim 10, wherein the activation state also comprises a position and an orientation of the attachment member that are consistent with packing.
15. The system of claim 1, wherein the operator interface comprises a push button, and the activation state comprises the push button being in a depressed position.
16. The system of claim 15, wherein the push button is disposed on a joystick.
17. The system of claim 1, wherein the operator interface comprises a joystick, and the activation state comprises the joystick being oriented in a predetermined orientation for a predetermined amount of time.
18. The system of claim 1, wherein the operator interface comprises a joystick, and the activation state comprises the joystick being jiggled.
19. The system of claim 1, further comprising an additional attachment mounted on the attachment member.

20. The system of claim 19, wherein the additional attachment comprises a bucket.
21. The system of claim 1, wherein the automatic vibration mechanism comprises an algorithm.
22. The system of claim 1, wherein the actuator is hydraulically powered, and the power system provides hydraulic power.
23. The system of claim 1, wherein the actuator is electrically powered, and the power system provides electrical power.
24. The system of claim 1, wherein the actuator comprises a cylinder, and a piston slidably engaged within the cylinder.
25. The system of claim 1, further comprising a frame supported by a plurality of ground engaging wheels, wherein the mechanical arm is operably coupled to the frame.
26. The system of claim 1, further comprising a frame supported by a plurality of ground engaging tracks, wherein the mechanical arm is operably coupled to the frame.

27. The system of claim 1, wherein the operator interface comprises a console mounted on a frame to which the mechanical arm is coupled.
28. The system of claim 1, wherein the operator interface comprises a remote control console.
29. A power machine, comprising:
- a frame;
 - a plurality of ground engaging members supporting the frame;
 - an engine operably connected to the ground engaging members;
 - a mechanical arm operably coupled to the frame;
 - an attachment member tiltably mounted on the mechanical arm about a pivot joint;
 - an actuator operably connected to the attachment member for powering the attachment member to tilt about the pivot joint;
 - a power system operably connected to the actuator;
 - an electronic control operatively connected to the power system, and comprising an automatic vibration mechanism for causing the attachment plate to vibrate automatically in response to an activation signal; and
 - an operator interface in operable communication with the electronic control; and

wherein the power machine comprises a default state, and an activation state for causing the activation signal.

30. The power machine of claim 29, wherein the attachment member has a range of tilt about the pivot joint bounded by an extreme forward orientation and an extreme rearward orientation, and wherein the activation state comprises the attachment member being oriented within a predetermined segment of the range of tilt for a predetermined length of time.
31. The power machine of claim 30, wherein the predetermined segment of the range of tilt includes the extreme forward orientation.
32. The power machine of claim 29, wherein the attachment member has a range of lift above a projected ground surface bounded by a minimum lift and a maximum lift, and wherein the activation state comprises the attachment member being positioned within a predetermined segment of the range of lift for a predetermined length of time.
33. The power machine of claim 32, wherein the predetermined segment of the range of lift includes the maximum lift.

34. The power machine of claim 32, wherein the attachment member also has a range of tilt about the pivot joint bounded by an extreme forward orientation and an extreme rearward orientation, and wherein the activation state comprises the attachment member being both positioned within a predetermined segment of the range of lift, and oriented within a predetermined segment of the range of tilt, for a predetermined length of time.
35. The power machine of claim 29, wherein the operator interface comprises a push button, and the activation state comprises the push button being in a depressed position.
36. The power machine of claim 29, wherein the operator interface comprises a joystick, and the activation state comprises the joystick being oriented in a predetermined orientation for a predetermined amount of time.
37. The power machine of claim 29, wherein the operator interface comprises a joystick, and the activation state comprises the joystick being jiggled.
38. The power machine of claim 29, further comprising an additional attachment mounted on the attachment member.

39. The power machine of claim 38, wherein the additional attachment comprises a bucket.
40. The power machine of claim 29, wherein the actuator is hydraulically powered, and the power system provides hydraulic power.
41. The power machine of claim 29, wherein the actuator is electrically powered, and the power system provides electrical power.
42. The power machine of claim 29, wherein the ground engaging members comprise wheels.
43. The power machine of claim 29, wherein the ground engaging members comprise tracks.
44. A method for causing a tiltably mounted attachment member to vibrate automatically, comprising the steps of:
- altering a system to an activation state;
 - communicating an activation signal to an electronic control of the system;
 - communicating an automatic vibration command from the electronic control to a power system operably connected to an actuator of the system; and

causing an attachment member, operably connected to the actuator and tiltably mounted on a mechanical arm of the system about a pivot joint, to vibrate automatically in response to the automatic vibration command.

45. The method of claim 44, further comprising the steps of:

altering the system out of the activation state;
and
responsively causing the attachment member to stop vibrating.

46. The method of claim 44, wherein causing the attachment member to vibrate automatically, comprises causing a bucket mounted on the attachment member to shake.

47. The method of claim 44, wherein causing the attachment member to vibrate automatically, comprises using a frequency and an amplitude of vibration that are optimized for shake-out of the attachment member.

48. The method of claim 44, wherein causing the attachment member to vibrate automatically, comprises alternating a hydraulic flow in the actuator.

49. The method of claim 44, wherein causing the attachment member to vibrate automatically, comprises alternating a drive direction of an electric motor associated with the actuator.